CLAIMS

1. An electromechanical signal selection device comprising:

a micro-vibrator which can be excited by an input signal; and

a post for retaining the micro-vibrator,

wherein the micro-vibrator can generate a change in physical property due to excitation so as to change a selected signal.

2. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a material whose physical property is changed in accordance with a structural change.

3. The electromechanical signal selection device according to claim 1 or 2, wherein the physical property is an electric conduction characteristic.

4. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator is retained by an electrode placed on the post.

5. The electromechanical signal selection device according to claim 4, wherein a bonded surface between the electrode and

the micro-vibrator is located at a distance from the post.

6. The electromechanical signal selection device according to claim 1, wherein the post comprises a structure having lower rigidity than that of the micro-vibrator.

7. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a multilayer structure of at least two layers including a material layer generating the change in physical property and a conductor layer.

8. The electromechanical signal selection device according to claim 7,

wherein the conductor is formed to be linear, and

wherein the material layer generating the change in physical property is formed around the linear conductor layer.

9. The electromechanical signal selection device according to claim 7, wherein the material layer generating the change in physical property is formed on the side where an electric field of a signal is concentrated.

10. The electromechanical signal selection device according to claim 9, wherein the material layer generating the change in physical property is formed under the substrate side of the

conductor layer.

11. The electromechanical signal selection device according to claim 7, wherein half the radius of the conductor is not larger than skin depth of a high frequency signal.

12. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises perovskite type transition metal oxide.

13. The electromechanical signal selection device according to claim 12, wherein the perovskite type transition metal oxide is $PrNiO_3$ showing metal-insulator transition.

14. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a piezoresistive effect material.

15. The electromechanical signal selection device according to claim 14, wherein the micro-vibrator comprises at least one of Si, $La_{1-x}Sr_xMnO_3$ and $BaTiO_3$.

16. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a superconductor.

17. The electromechanical signal selection device according to claim 16, wherein the superconductor is one of Al, Pb, $La_{2-X}Sr_XCuO_4$ and $(BEDTTTF)_2I_3$.

18. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a carbon-based material.

19. The electromechanical signal selection device according to claim 1, wherein the input signal is supplied through an electrode provided in the micro-vibrator.

20. The electromechanical signal selection device according to claim 1, wherein the input signal is supplied through a driving electrode disposed adjacently to the micro-vibrator.

21. The electromechanical signal selection device according to claim 1, wherein an external force to be applied to the driving electrode is an electrostatic force.

22. The electromechanical signal selection device according to claim 1, wherein a mechanism for applying an external magnetic field to the micro-vibrator is provided to excite the micro-vibrator due to a Lorentz force.

23. The electromechanical signal selection device according to claim 1, wherein a mechanism for applying an external magnetic field is provided in a driving electrode or a signal input electrode disposed adjacently to the micro-vibrator so as to excite vibration of the micro-vibrator in a desired direction.

24. The electromechanical signal selection device according to claim 1, wherein the change in physical property is caused by piezoelectric effect.

25. The electromechanical signal selection device according to claim 24, wherein the micro-vibrator is designed to generate a signal by virtue of the piezoelectric effect when the micro-vibrator is excited to produce a structural change.

26. The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises ceramics.

27. The electromechanical signal selection device according to claim 26, wherein the micro-vibrator comprises PZT.